

WHAT IS CLAIMED IS:

1. A coating formulation for drywall application comprising water, a binder, a filler comprising at least about 60% by weight  $\text{CaCO}_3$ , and a noncellulosic thickener.
2. The coating formulation of claim 1, further comprising a dispersant.
3. The coating formulation of claim 2, further comprising about 0.1 to about 20% by weight anti-cracking agent and about 0.1 to about 5% by weight workability agent.
4. The coating formulation of claim 3, wherein the anti-cracking agent is mica and the workability agent is clay.
5. The coating formulation of claim 3, wherein the binder is present in an amount of about 0.5 to about 30% by weight, the dispersant is present in an amount of about 0.5 to about 15% by weight and the thickener is present in an amount of about 0.05 to about 50% by weight.
6. The coating formulation of claim 2, wherein the binder is a latex binder.
7. The coating formulation of claim 6, wherein the binder is an acrylic latex binder.
8. The coating formulation of claim 7, wherein the acrylic latex is present in an amount of about 0.5 to about 30% by weight, the dispersant is present in an amount of about 0.5 to about 15% by weight and the thickener is present in an amount of about 0.05 to about 50% by weight.
9. The coating formulation of claim 2, wherein the dispersant comprises a sodium polyacrylate.

10. The coating formulation of claim 1, wherein the thickener comprises a copolymer of an acrylic acid and an acrylic ester.

11. The coating formulation of claim 1, wherein the filler comprises at least about 75% by weight  $\text{CaCO}_3$ .

12. The coating formulation of claim 3, wherein the filler comprises at least about 75% by weight  $\text{CaCO}_3$ .

13. The coating formulation of claim 1, wherein the filler further comprises magnesium carbonate, dolomite, gypsum, anhydrite, or mixtures thereof.

14. A coating formulation for drywall application comprising:  
about 0.5 to about 30% by weight of a latex binder,  
about 40 to about 70% by weight of a filler comprising at least about 60% by weight  $\text{CaCO}_3$ ,  
about 0.5 to about 15% by weight of a dispersant,  
about 0.05 to about 50% by weight of a noncellulosic thickener, and  
water in an amount sufficient to provide a viscosity for the formulation of about 300 to about 450 cps.

15. The coating formulation of claim 14, further comprising about 0.1 to about 20% by weight anti-cracking agent and about 0.1 to about 5% by weight workability agent.

16. The coating formulation of claim 15, wherein the anti-cracking agent is mica and the workability agent is clay.

17. The coating formulation of claim 15, wherein the dispersant comprises a sodium polyacrylate.

18. The coating formulation of claim 14, wherein the formulation comprises  
about 0.5 to about 15% by weight of a latex binder,  
about 45 to about 65% by weight of a filler comprising at least about 75%  
by weight  $\text{CaCO}_3$ ,  
about 2.0 to about 9.0% by weight of a dispersant,  
about 0.1 to about 5.0% by weight of a noncellulosic thickener

19. The coating formulation of claim 14, wherein the latex binder comprises an acrylic latex binder.

20. The coating formulation of claim 14, wherein the thickener comprises a copolymer of an acrylic acid and an acrylic ester.

21. The coating formulation of claim 14, wherein the filler comprises at least about 75% by weight  $\text{CaCO}_3$ .

22. The coating formulation of claim 15, wherein the filler comprises at least about 75% by weight  $\text{CaCO}_3$ .

23. The coating formulation of claim 14, wherein the filler further comprises magnesium carbonate, dolomite, gypsum, anhydrite, or mixtures thereof.

24. A construction assembly for interior walls, comprising:  
skim coated drywall elements comprising drywall elements having at least one skim coat deposited on the drywall elements, the skim coat formed from a coating formulation comprising water, a binder, a filler comprising at least about 60% by weight  $\text{CaCO}_3$ , and a noncellulosic thickener; and  
at least one jointing material jointing the skim coated drywall elements to form a substantially plane outer surface.

25. The construction assembly of claim 24, wherein the at least one jointing material and the at least one skim coat form, in the dry state, a substantially homogeneous outer surface on the substantially plane outer surface.

26. The construction assembly of claim 24, wherein the drywall elements are flat, prefabricated elements.

27. The construction assembly of claim 26, wherein the flat, prefabricated elements are gypsum wallboard.

28. The construction assembly of claim 24, wherein the skim coat when dry has a thickness of between about 5 and about 60 mil.

29. The construction assembly of claim 25, wherein the substantially homogeneous outer surface comprises a level 5 finish.

30. The construction assembly of claim 24, wherein the skim coat is formed from a coating formulation further comprising about 0.1 to about 20% by weight anti-cracking agent and about 0.1 to about 5% by weight workability agent.

31. The construction assembly of claim 30, wherein the anti-cracking agent is mica and the workability agent is clay.

32. The construction assembly of claim 30, wherein the coating formulation further comprises a dispersant.

33. The construction assembly of claim 32, wherein the binder is present in an amount of about 0.5 to about 30% by weight, the dispersant is present in an amount of about 0.5 to about 15% by weight and the thickener is present in an amount of about 0.05 to about 50% by weight.

34. The construction assembly of claim 32, wherein the binder is an acrylic latex binder.

35. The construction assembly of claim 34, wherein the acrylic latex binder is present in an amount of about 0.5 to about 30% by weight, the dispersant is present in an amount of about 0.5 to about 15% by weight and the thickener is present in an amount of about 0.05 to about 50% by weight.

36. The construction assembly of claim 32, wherein the dispersant comprises a sodium polyacrylate.

37. The construction assembly of claim 24, wherein the thickener comprises a copolymer of an acrylic acid and an acrylic ester.

38. A method for the construction of interior walls comprising:  
assembling skim coated prefabricated drywall elements, wherein the skim coated prefabricated drywall elements have a coating layer formed from a coating formulation comprising water, a binder, a filler comprising at least about 60% by weight  $\text{CaCO}_3$ , and a noncellulosic thickener, and are formed of at least one skim coat deposited on the prefabricated drywall elements by a coating device;  
jointing adjacent prefabricated drywall elements with a jointing material to form joints; and  
drying the jointing material.

39. The method of claim 38, wherein the jointing material and the at least one skim coat form, in the dry state, a substantially homogeneous outer surface for the entire surface formed from the jointing material and skim coated prefabricated drywall elements.

40. The method of claim 39, wherein the substantially homogeneous outer surface comprises a level 5 finish.

41. The method of claim 38, wherein the skim coat when dry has a thickness of between about 5 and about 60 mil.

42. The method of claim 38, wherein the skim coat is deposited on the prefabricated drywall elements by spraying during prefabrication of the drywall elements.

43. The method of claim 38, wherein the skim coat is deposited after assembly of the skim coated prefabricated drywall elements.

44. The method of claim 38, wherein the coating formulation further comprises about 0.1 to about 20% by weight mica and about 0.1 to about 5% by weight clay.

45. The method of claim 38, wherein coating formulation further comprises a dispersant.

46. The method of claim 45, wherein the binder is an acrylic latex binder.

47. The method of claim 46, wherein the acrylic latex binder is present in an amount of about 0.5 to about 30% by weight, the dispersant is present in an amount of about 0.5 to about 15% by weight and the thickener is present in an amount of about 0.05 to about 50% by weight.

48. The method of claim 45, wherein the dispersant is a sodium polyacrylate.

49. The method of claim 45, wherein the thickener comprises a copolymer of an acrylic acid and an acrylic ester.

50. The method of claim 38, wherein the prefabricated drywall elements are gypsum wallboard.

51. A flat, prefabricated drywall element comprising a core of plaster or gypsum having at least one sheet of lining paper and a coating layer formed of at least one skim coat deposited on the lining paper, the skim coat formed from a coating formulation comprising water, a binder, a filler comprising at least about 60% by weight  $\text{CaCO}_3$ , and a noncellulosic thickener.

52. The flat, prefabricated drywall element of claim 51, wherein the coating formulation further comprises a dispersant.

53. The flat, prefabricated drywall element of claim 51, wherein the binder is an acrylic latex binder.